

FRA

Fall Risk Assessment



Body Balance Ability Analysis

Factors affecting the maintenance of body balance are analyzed step by step in various ways

Intuitive Result Presentation

The test results are presented in terms of the following major parts: sensory system, musculoskeletal system, nervous system, integrated balance test, and overall score.

Managed by Periodic Examination

Periodic examination differentiates patient management by controlling changes in body balance capability and risk factors.

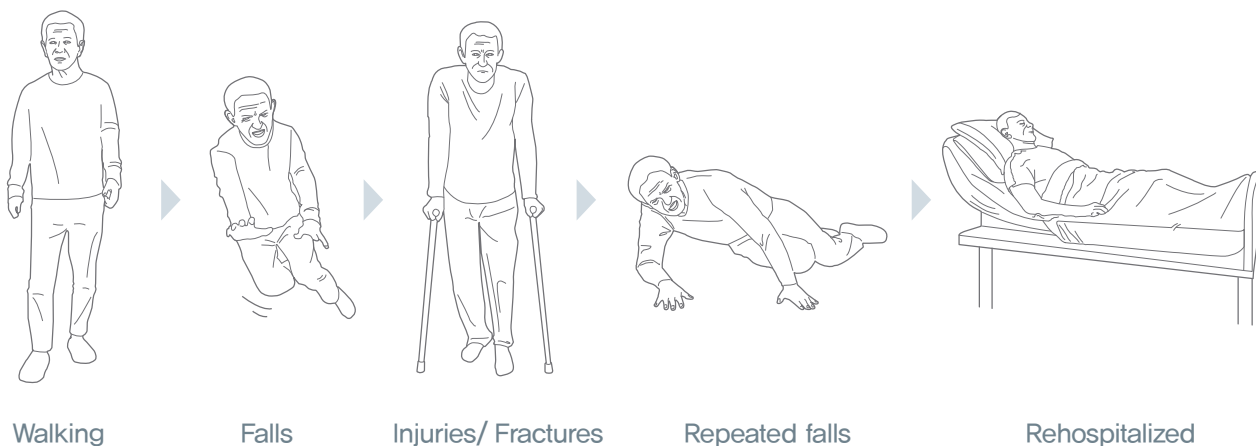
Fall Risk, A Serious Problem That Threatens Elderly Health

The average life expectancy of Koreans is 82 years old, which has been rising steeply. Longevity is surely a blessing, but unhealthy old age can be a social problem. As old age prolongs, regrettably, the period of living with diseases or disabilities is also extending.

Fall is a common geriatric disease that is caused by lack of body balance and one in four elderly people has experienced falls over the past year.

Simple fall may seem insignificant, but for the elderly people, even one fall is fatal because it can impair overall physical function. More than 60% of the elderly people who fell have been treated at hospitals and half of the elderly people who once fell are exposed to repeated falls.

* Survey of Elderly People, 2014 (Ministry of Health and Welfare)



Prevention is the only cure

Identifying Fall Risk and Managing Risk Factors

By knowing your risk of falling, 80% of falls can be predictable. Furthermore, about two-thirds of deaths from falls can also be potentially prevented. First, we evaluate the risk of falling, and if the risk is above a certain level, we identify fall risk factors from various angles. The fall risk can be reduced if its factors are continuously managed and patients are given personalized prescriptions.

* The U.S. Public Health Service



Fall is a phenomenon caused from inability to maintain balance.

Multilateral Body Balance Ability Analysis System, FRA



step 1.

FRA510S

- Membership registration and survey
- Sensory system, nervous system test
- Integrated balance capability test

step 2.

InBody

- Leg muscle mass measurement
- Left and right leg muscle balance analysis

step 3.

IB-LS

- Leg muscle strength measurement
- Left and right leg muscle strength balance analysis

| Factors analyzed step by step, as well as overall body balance capability

Falls are not caused by a single factor, but by a combination of multiple risk factors. FRA does not simply evaluate body balance level, but analyzes the performance at each step to maintain the balance. Through this method, factors affecting the maintenance of body balance are discovered, and the degree to which the factors affect the overall ability to balance is investigated.

Balance ability is judged comprehensively based on the following performance: Does the Sensory System properly receive information from Visual, Vestibular, and Somatic Senses? Does the Nervous System deliver commands well by integrating the information transmitted? Is the Musculoskeletal System operating muscles and joints as ordered?

| Personalized Treatment and Patient Management

The various parameters provided in the results increase the quality of treatment related to balance and falls, and the treatment becomes convenient with scores and evaluations that can be easily and intuitively understood.

In addition, it is possible to establish an efficient and personalized patient management system by managing the high-risk fall groups through periodic examination and treatment.



Continuously Managing Patients with Balance Ability Tests and Exercises

Improving Balance Ability with Balance Exercises

| Eight Balance Exercises to Reduce Fall Risk Factors

FRA does not simply perform Balance Capability Tests, but also provides Balance Exercises that can improve the factors lacking in patients. Balance Exercises provide a customized program for each fall risk factor based on the Balance Capability Test, enabling continuous patient management.



Diverse Analysis followed with Various Application

Experience a Personalized Patient Care System with The FRA

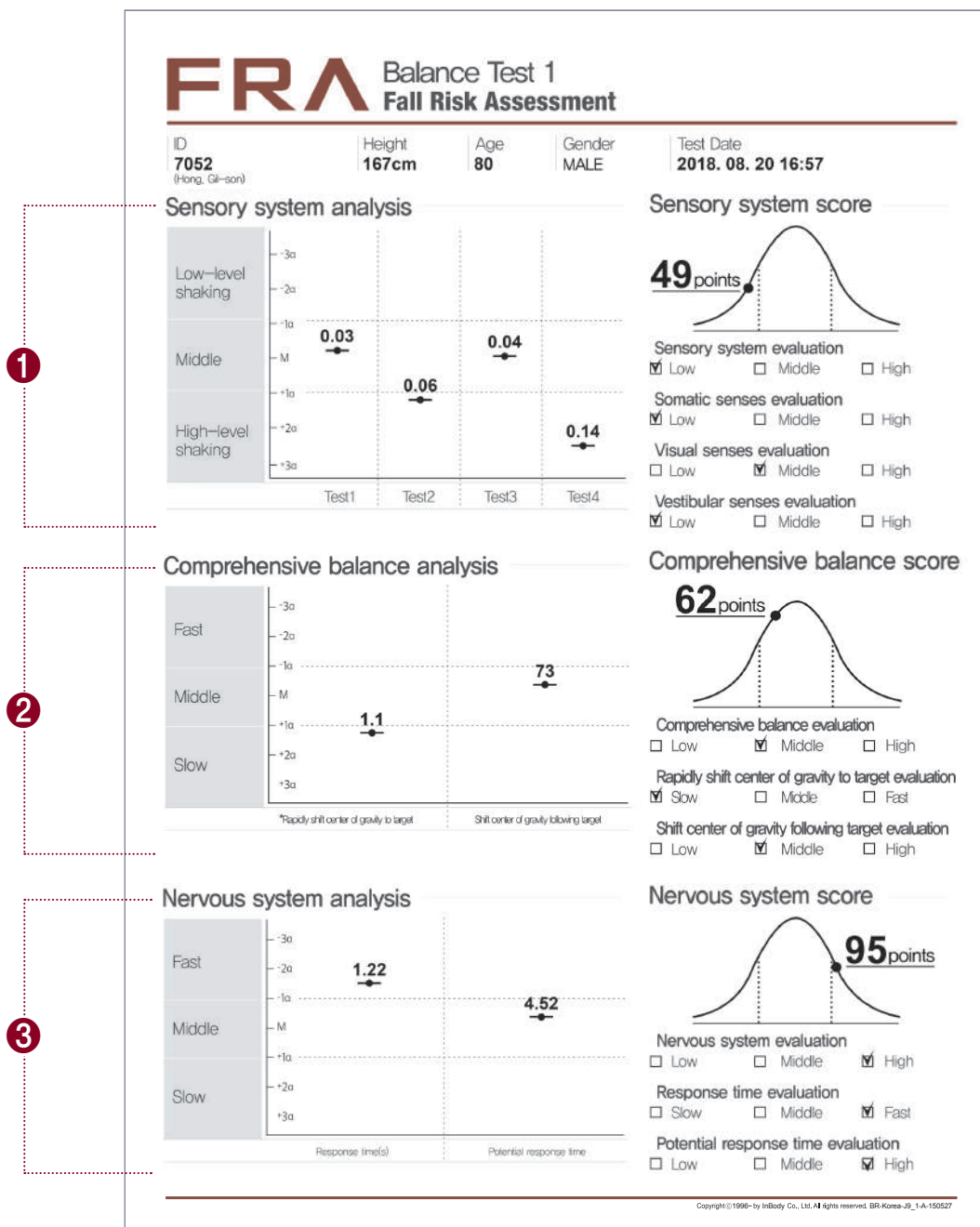
Body Balance Ability Analysis

Intuitive Presentation of Result Scores

Management through Periodic Examination



FRA results



① Sensory System Analysis

Sensory System Analysis is an item that evaluates how well it maintains equilibrium using information transmitted from the somatosensory, visual, and vestibular senses in detail. This test, called m-CTSIB, analyzes your ability to maintain equilibrium with each sensory decline.

② Integrated Balance Capability Analysis

The integrated balance capability analysis evaluates how well the center of gravity is controlled while maintaining integrative balance, based on the fact that the sensory system, nervous system, and musculoskeletal system can achieve the balance of the body when they faithfully perform their roles.

③ Nervous System Analysis

Neural System Analysis measures the reaction time and posture holding time to evaluate how fast you respond when recognizing a situation. The elderly people react slower as they get older, so the risk of falls can be lowered if they can quickly recognize and judge the situation when exposed to the risk of falls.

Scores for each section, including the overall score, are provided on the four result sheets to help you understand quickly, and you can intuitively understand the results with graphs. The results consist of five parts, and user information such as personal information is shown at the top.

FRA

Balance Test 4 Fall Risk Assessment

ID
7052
(Hong, Gil-Son)

Height
160cm

Age
64

Gender
MALE

Test Date
2018. 08. 20 16:57

Musculoskeletal system analysis

Leg lean mass

	Under	Normal	Over
Left leg	-3σ -2σ -1σ M +1σ +2σ +3σ	6.1	
Right leg	-3σ -2σ -1σ M +1σ +2σ +3σ	6.0	

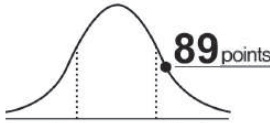
Extensor strength

	Under	Normal	Over
Left leg	-3σ -2σ -1σ M +1σ +2σ +3σ	8.8	
Right leg	-3σ -2σ -1σ M +1σ +2σ +3σ	7.7	

Flexor strength

	Under	Normal	Over
Left leg	-3σ -2σ -1σ M +1σ +2σ +3σ	16.8	
Right leg	-3σ -2σ -1σ M +1σ +2σ +3σ	13.2	

Musculoskeletal system score



89 points

Musculoskeletal system evaluation

☒ Low ☐ Middle ☐ High

Leg lean mass evaluation

☐ Under ☒ Normal ☐ Over

Evaluation of bilateral symmetry between Left and Right Leg Lean Mass

☒ Symmetrical ☐ Slightly asymmetrical ☐ Severely Asymmetrical

Leg muscle strength evaluation

☒ Low ☐ Middle ☐ High

Evaluation of bilateral symmetry between Left and Right Leg Lean Mass

☒ Symmetrical ☐ Slightly asymmetrical ☐ Severely Asymmetrical

Comprehensive analysis

Lean mass (Current weight Reference, %)		F/B lean mass rate(Flexor/Extensor) (Standard range 0.5~0.7)		Relative muscular strength			
Left leg	Right leg	Left leg	Right leg	Left leg strength (Extensor strength/weight)	Left leg strength (Flexor strength/weight)	Right leg strength (Extensor strength/weight)	Right leg strength (Flexor strength/weight)
11.8	12.2	0.83	0.91	0.41	0.34	0.39	0.35

Total evaluation | Fall risk analysis ☐ High risk ☒ Middle ☐ Low risk

Sensory system

	Low risk	Middle	High risk
	+3σ +2σ +1σ M -1σ -2σ -3σ	49	

Nervous system

	Low risk	Middle	High risk
	+3σ +2σ +1σ M -1σ -2σ -3σ	95	

Comprehensive balance

	Low risk	Middle	High risk
	+3σ +2σ +1σ M -1σ -2σ -3σ	62	

Musculoskeletal system

	Low risk	Middle	High risk
	+3σ +2σ +1σ M -1σ -2σ -3σ	55	

Comprehensive analysis

Fall risk analysis ☐ High risk ☒ Middle ☐ Low risk

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④ Musculoskeletal System Analysis

Musculoskeletal analysis Evaluates whether or not the leg muscle mass, leg strength are sufficient, last but not least if the symmetrical balance is achieved. Decrease in leg muscle mass and leg strength is commonly found in the elderly people, and weakness in the lower extremity is a very important risk factor causing falls.

⑤ Comprehensive Analysis

Based on the sensory system, nervous system, musculoskeletal system, and integrated balance capability analysis, the comprehensive analysis is presented in an easy-to-understand score of FRA.

FRA Specifications

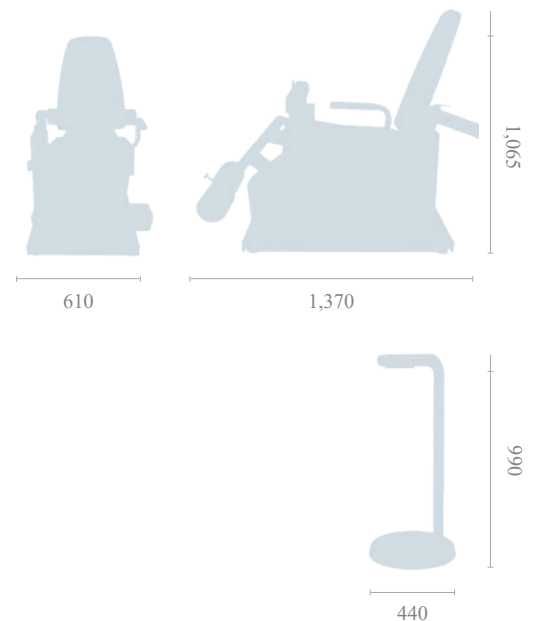
FRA510S Specification

Measurement Method	Weight is measured on the four load cells of the footplate.
Result Items	Shaking Index, Sensory System Score, Sensory System Evaluation, Somatosensory Evaluation, Visual Evaluation, Vestibular Sense Evaluation, Response Time, Posture Holding Time, Nervous System Score, Nervous System Evaluation, Response Time Evaluation, Posture Holding Time Evaluation, Integrated Balance Capability Analysis Score, Integrated Balance Capability Evaluation, Comprehensive Score, Fall Risk Analysis * When InBody and IB-LS are linked: right leg muscle mass, left leg muscle mass, muscle mass left/right balance, right leg muscle strength, left leg muscle strength, muscle strength left/right balance, musculoskeletal score, leg muscle mass evaluation, left/right balance evaluation of leg muscle mass, leg strength evaluation, left-right balance evaluation of leg strength
Rated Power Consumption	AC 100~240V, 50~60Hz 1.2A 100VA
Display	19inch Color Touch Monitor
Input Interface	Touch Screen
External Interface	RS-232C 2EA, USB 2.0 Host 1EA, USB 3.0 Host 2EA, LAN 2EA
Compatible Printers	Laser/Inkjet printers (recommended by Inbody Co., Ltd.) * Check http://www.inbodyservice.com for printer types Device size
Device Size	Kiosk 580 (W) × 630 (L) × 1620 (H): mm Footplate 832 (W) × 925 (L) × 875 (H): mm
Device Weight	Kiosk 53.5 kg, Footplate 42.5 kg
Operating Environment	Temperature 10~40℃, Humidity 30~75%, Air pressure 70~106kpa
Storage Environment	Temperature -10 ~ 60℃, Humidity 10~80%, Air pressure 50~106kpa (No Condensation)
Measurement Range	5 ~ 150kg



IB-LS and Terminal Specifications

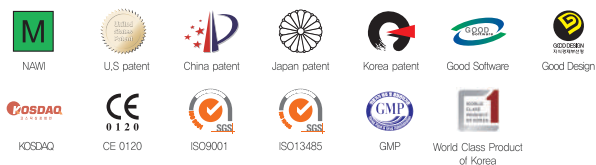
Measurement Method	Measure the force applied to the leg mount with load cells.
Result Items	Left Leg Extensor Strength, Right Leg Extensor Strength, Left Leg Flexor Strength, Right Leg Flexor Strength
Adaptor	Power Input: AC 100~240V, 50~60Hz, 1.2 A Power output: DC 12V, 3.4 A
Display	7inch TFT Color LCD
Input Interface	Touch Screen
External Interface	RS-232C 1EA, USB 2.0 Host 1EA, USB 2.0 Slave 1EA, LAN 1EA
Device Size	IB-LS 610(W) × 1,370(L) × 1,065(H): mm Terminal 440 (W) × 440 (L) × 990 (H): mm
Device Weight	IB-LS 108kg, Terminal 8.5 kg
Operating Environment	Temperature 10~40℃, Humidity 30~75%, Air pressure 70~106kPa
Transport and Storage Environment	Temperature -10~70℃, Humidity 10~80%, Air pressure 50~106kPa (No Condensation)
Measurement Range	5 ~ 150kg



* InBody has a limited range of connectable models. If you have any questions, contact Inbody Co., Ltd.
* The above information is subject to change without notice to improve appearance and product performance.
* This product is a Medical Device, and read the Precautions and Instructions carefully before use.

Certifications and Patents obtained by InBody

InBody owns the first body component analyzer in Korea to acquire European and Japanese weighing approvals, and holds over 80 patents worldwide.



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